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ABSTRACT

This paper proposes a model of organizational analysis, developed at the Department of Organizational Development at the University of Klagenfurt (Austria), as a framework for cross-cultural education. The model is derived from open systems theory which claims that organizational analysis should focus on the relationship of all the pieces of an organization as they interact together. Research at Klagenfurt has resulted in a framework called the Offenes Sozio-Techno-Oekonomisches (OSTO) System, which identifies nine dimensions on which organizations can be analyzed. These dimensions form the basis of seminar work designed to prepare students to analyze organizations in a wide variety of business situations. The nine dimensions include: the social system, technical system, economic system, political control system, product-market-future, environment, history, future orientation, and the sub-world system. The OSTO Model can be used to analyze the cultural values underlying practices observed in different countries. An example of the model's application is given in a cross-cultural analysis of the United States and Austria. The paper concludes that use of the OSTO model expands the traditional objectives of organizational development to include sensitizing students to cultural and commercial conditions which may vary radically from those in their own countries. (JDD)

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BUSINESS AND PROFESSIONAL EDUCATION

AN OPEN SYSTEMS APPROACH TO CROSS-CULTURAL TRAINING

Thomas Cullen

AN OPEN SYSTEMS APPROACH TO CROSS-CULTURAL TRAINING

INTRODUCTION

This paper proposes a model of organizational analysis developed at an Austrian University as a frameowrk for cross-cultural education. The department of Organizational Development at the University of Klagenfurt emphasizes open systems theory as a basis for describing and explaining the features which contribute to the efficiency and efectiveness of of individuals working together in organizations.

OPEN SYSTEMS THEORY

Derived from the *General Systems Theory* first outlined by Austrian biologist Ludwig von Bertalanffy (1950), Open Systems Theory claims that "previous approaches [to organizational analysis] had focused too much on individual pieces of an organization (technical tasks, people, etc.) and not enough on the relationship of all the pieces as they interact together" (Hanna 1988, p.8). Open Systems Theory draws a parallel between organizations and biological systems; organizations, like all living systems, are arrangements of interrelated parts which share a common purpose and which are separated from their environment by a boundary. The denotation "open" system emphasizes the fact that all living systems must be open to their environment, assimilating inputs from it and releasing output into it.

In upper level classes of the Klagenfurt curriculum emphasis is placed on theories of assessment and design which may be utilized to enhance the efficiency or responsiveness of an organization. Students examine several models which draw on the insights of Open Systems Theory including the *Organizational Performance Model* which tracks five variables (business structure, results, culture, design elements and strategy) in order to interpret a company's performance (Hanna 1988). Another application of the Open Systems framework which students explore is the *Socio-technical Systems Model*. Pioneered by researchers at the Tavistock Institute of Human Relations in London, *Socio-technical Systems* posits that work can best be understood, and most productively arranged, if viewed primarily as an

interaction between social (support, supervision, etc.) and technical (machinery, work processes, etc.) factors (Emery and Trist 1978).

Research at Klagenfurt (Rieckmann 1980, 1982, 1982b) has elaborated on Socio-Technical Systems, outlining a framework called the Offenes Sozio-Techno-Oekonomisches (OSTO) System. In an attempt to systematize the analysis of the various factors which influence the design and development of organizations, the OSTO Model identifies nine dimensions on which organizations can be analyzed. These dimensions include not only an organization's social and technical arrangements, but also a variety of factors which range from its history to its orientation toward the future. These dimensions are held to be relevant to all organizations and form the basis of seminar work designed to prepare students to analyze organizations in a wide variety of business situations.

The OSTO Systems Model

The nine parameters of the OSTO Systems Model are: the *Social, Technical, Economic* and *Political Control Systems; Product-Market-Future; Environment*; *History; Future Orientation;* and the *Sub-world System.* The *Social System* includes the formal and informal working arrangements of all members of the organization. These arrangements might be revealed in reporting-relationships and group memberships within the organization. In addition, the organization's observable culture, values and motivation practices are included in the social dimension. These features may be discerned from the company's organigram, personnel policies, industrial relations policies and public relations materials.

The *Technical System* includes the physical plant, tools, machines and buildings that people use to transform the organization's input into output. Are products run off on assembly lines which have divided work processes into the smallest possible units? Is labour on a given task done by several workers? Simultaneously? Consecutively? What role does the layout and architecture of the plant play in facilitating (or hindering) the processes of the organization? The answers to these questions outline the superstructure of an organization's technical systems and illuminate the relationship between people and their tools.

The *Economic System*, within the OSTO framework, refers to anything which might be assessed in monetary terms. It includes the way an organization is financed, which

financial goals guide its activities and how it budgets its resources. Needless to say, the *economic, technical* and *social* dimensions are tightly integrated. They affect each other at the most basic levels and taken together reflect many of the fundamental relationships which characterize an organization. Many OD specialists would find the *economic, social* and *technical* dimensions adequate for undertaking the analysis of an organization. It is the extent to which the OSTO Model goes beyond these parameters that distinguishes it from its socio-technical antecedents.

The *Product-Market-Future* is the fourth dimension of the OSTO Model. It encompasses a firm's product and the degree to which that product satisfies a need in the organization's environment. It also reflects the extent to which the organization is attuned to changes in the environment which may affect how successfully the organization *continues* to fulfill environmental needs. Inside the OSTO Model an organization's *raison d'etre* is that its output satisfies a need in its environment. By doing so, the organization sustains itself; failing to do so risks the organization's very existence. IBM's prescient withdrawal from the typewriter market during the advent of the word-processing revolution reflects a positive *product-market-future* orientation. On the other hand, Swiss makers of mechanical watches found themselves behind the times as quartz technology changed the complexion of that industry. The *product-market-future* dimension reflects a company's ability to adapt its output to changing needs in its environment and thereby ensure its continued viability.

The *Political Control System* is a description of the formal and informal relations among those who structure and control an organization. These relationships reflect the cooperative and competing interests of various stakeholders, including owners (individual proprietors, partners or stockholders), managers, labour leaders, creditors and regulatory agencies. The balance of power among these interest groups is itself a dynamic system which inevitably changes with the ongoing struggle for control.

In Open Systems Theory an organization defines itself in terms of its boundary with the environment. The environment regulates an organization by controlling available input and delimiting acceptable output. In the OSTO Model the *environmental* dimension should be understood in the broadest sense. It includes the social, political and cultural context in which the organization "lives", the technological and infrastructural circumstances in which an organization operates and the ecological system of which it is a part. The organization's character and the nature of its products will be determined by inputs available from the

environment. Moreover, the organization will be constrained by the demands and expectations imposed on it by its environment. Accordingly, any comprehensive organizational analysis must actively and thoroughly explore the relationship between a system and its milieu.

History is the seventh dimension. This *historical* view offers perspective on aspects of a system which may best be viewed over a period of time. The importance of this parameter is highlighted when one realizes that organizations tend to outlive individual people. Consequently, elements of a system may have rationales which antedate current members and some phenomena such as institutional affiliations, corporate image or brand values might only be understood in light of historical factors. The *historical* dimension provides a temporal context in which these factors can be understood.

The eighth dimension is called the *Future Orientation* but refers primarily to an organization's ability to interpret environmental feedback and to undertake proactive measures to ensure the continued health and well-being of the system. This dimension differs from *Product-Market-Future* in its relevance for systems behaviour beyond product and market. It may include, for example, the effects of an environmental factor such as the women's movement or demographic changes on the personnel policies of the organization.

The final dimension to be examined under the OSTO Systems Model is alternatively referred to as *Deep Organizational Development* or the *Sub-world System* of an organization. It is the projection of the suppressed talents and repressed energies in the organization. These are frequently anti-social or destructive forces which may subvert the core processes of the system. Harnessing these energies, or at least providing for their release, might be among the most important challenges facing organizational design specialists. The *Sub-world System* exists in recognition of the profound impact that human affective variables have on the effectiveness of an organization. The most carefully designed organization will not operate at optimal efficiency if its members harbour antagonism towards each other or towards the organization as a whole.

Taken collectively these parameters provide a basis for the thorough analysis of an organization from a variety of germane perspectives. The *social, technical, economic* and *political control* parameters have an obvious relevance to the task of analyzing a business organization and have been discussed at length in the organizational development literature (cf. Emery and Trist 1970, 1978). The other five analytical dimensions offer opportunities

for insights that are less obvious, but which may be of equal importance in identifying strengths, weaknesses and anomalies in an organization.

Table 1. OSTO MODEL DIMENSIONS

SOCIAL SYSTEM	Members, hierarchies, procedures, climate, culture and values that characterize the interpersonal relationships within an organization.
TECHNICAL SYSTEM	Machines, tools, equipment and process engineering used by the system. The architecture, layout and configuration of the physical plant of a system.
ECONOMIC SYSTEM	All aspects of the system which can be measured or characterized in terms of money, including: finance, investment, budgets, wages and salaries, cost-control systems, sales and profitability goals, etc.
PRODUCT MARKET FUTURE	Focus is on how a system's product continues to satisfy the needs of its environment, thereby sustaining the organization's existence.
POLITICAL CONTROL SYSTEM	Description of the formal and informal relations between those who structure and control the system, including management, labour representatives, stockholders, creditors, regulatory agencies, etc.
ENVIRONMENT	Social, cultural, political, technological and ecological milieu in which a system exists. Focus is on the environment as the provider of the input required for the system's output production and on the environment as the creator of the conditions which circumscribe a systems existence.
HISTORY	Precedents which shape system behaviour (e.g. *elements, such as "image" might only be comprehensible in this context*).
FUTURE ORIENTATION	Condition of uncertainty which affects various systems differently.
SUB-WORLD SYSTEM	"Shadow" of an organization which is a projection of suppressed or unwelcome energy in the system.

Several problems exist with regard to the evaluation of organizations along these dimensions. Behavioural factors are fairly accessible to the analyst; others factors are not. The environmental and historical dimensions are particularly open to competing, subjective assessments. The analysis of the *Sub-world System* is dependent primarily on poorly defined analytical techniques such as *sensing*[1]. Problems of assessment notwithstanding, the depth and breadth of analysis guided by the OSTO Model ensures that an organization is analyzed

[1] Glossed by Huse (1980) as "a diagnosis or information gathering process, such as *a group sensing session* or *coffee with the boss*".

from perspectives that are relevant to performance but which might otherwise go unexamined. Moreover, the systematicity of OSTO analysis ensures that this examination is done methodically and completely.

OSTO: Learning to Understand other Cultures

The OSTO Model is ordinarily applied to examine differences among organizations within a country. It can, however, be used (and has been used in Klagenfurt) for analyzing the cultural values underlying the practices observed in different countries. From the point of view of cross-cultural pedagogy the OSTO approach offers several advantages. First, it segments the enormously diffuse task of cultural analysis into manageable units. The nine dimensions of the model break down the amorphous concept of culture into readily identifiable topics which are sufficiently narrow in scope that students can focus attention on specific issues of cultural identity. At the same time these units are general enough to be adapted to the needs of political science or literature students as well as business majors. A final advantage is that the model itself is relatively value neutral[2], providing only a framework for analysis, a focus for discussion and a basis for comparison.

Recently, the OSTO Model was used for a cross-cultural analysis of the United States and Austria. Analyzing the *Social System*, participants drew from a variety of sources to describe the United States, however, most of their perceptions seemed shaped more by the popular mass media than by academic materials or first-hand experience. This led to active discussion on the affect of stereotypes and selective perception in viewing another culture. This interesting and productive digression notwithstanding, students noted such factors as the diversity of the population, meritocracy and disparities in socio-economic status as characteristic of American society. These factors were seen to manifest themselves in organizational characteristics such as employee diversity, steeply hierarchical systems and high salary differentials. Participants saw Austria as more homogeneous, bureaucratic and egalitarian than the U.S. The focus on homogeneity as a salient national characteristic was particularly poignant at the time of the seminar; some of the participants felt that Austrian

[2] Any choice of data reflects a judgment that this information is more *valuable* than other information. Still, the individual dimensions of the OSTO model do not presuppose value judgments.

homogeneity was being threatened by an increasing influx of refugees from Eastern Europe and the Balkans. Participants cited the tenure-based personnel policies as reflections of the Austrian regard for tradition and equality in Austrian organizations.

Regarding the *Technical System* dimension, participants saw Austria as undistinguished from the rest of Europe with regard to technology. U.S leadership in technology development was seen to be waning in the face of European and Japanese competition. One area where the U.S. was viewed as technologically unsurpassed was in military hardware; however, American efforts to maintain their military superiority were seen as a contributing factor in the decline of its leadership in non-military technology. The consensus view was that the rest of the world, Austria included, was becoming more similar to the U. S. with regard to technology and production processes.

Students' discussion of the *economic* dimension revealed strong opinions about the circumstances prevailing in the United States. America was seen to be a bastion of unrestrained capitalism. On the positive side, this system was viewed as supportive of entrepreneurial endeavors; on the negative, the economy was viewed as subject to corporate hegemony and characterized by gross inequalities in income. In contrast, Austria was seen as a more responsibly managed economy where the guiding hand of government complemented the invisible hand of the market in regulating economic activity. In Austrian organizations the role of the government was particularly evident in price supports, subsidies and state ownership of many companies. American organizations were seen to be more flexible, if only because they were free of the social responsibilities of their Austrian counterparts.

Product-Market-Future was a difficult dimension for students to appreciate outside the context of a marketing strategy. The underlying principle of *P-M-F* is that products must change to meet the changing needs of the market. Students saw *P-M-F* as an indicator of how well an organization or country is attuned to the times. On this dimension America was seen as capable of proactively controlling its future, creating markets for all things new and different, fostering a culture of innovation and planned obsolescence. The implication for organizations was that they needed to be flexible, market sensitive and R&D intensive. Austria, on the other hand, was seen as a country whose preparation for the future focused on producing high-quality, if not always novel, products. The implication for organizations was an emphasis on quality control - an organization need not be first if it could consistently

be best.

The *Political Control System,* as outlined in the model, was deemed to be a parameter on which the United States and Austria were quite similar, at least to the extent that they each had traditions of strong central authorities. This tradition was reflected in both governmental and corporate structure. Austrians viewed their emphasis on consensus and compromise as being more democratic and representative than the confrontational groundrules perceived to apply in America. At the organizational level the Austrian egalitarian value was seen to be manifested in regulations designed to protect employee rights. America's confrontational *Political Control System* was most evident to the Austrian participants in the wave of corporate takeovers that swept America in the 1980's when stockholders, bondholders, management and workers were pitted against each other in ongoing battles for profit, control and security.

Environment was seen to have had a definitive impact on both Austria and America. America's size and resources were seen as the basis of its wealth. Austria's central location in Europe was viewed as both its greatest asset and liability. Interesting discussion arose from the teacher's opinion that the U.S., due to its ocean borders, was relatively insular in its outlook on the world and contrasted sharply with the students' view that American multinational corporations were a manifestation of a highly developed global outlook.

Discussing the *historical* dimension, the Austrian participants agreed that their nation had been defined by the two world wars of this century. However, students had two opposing views of modern Austria. Some saw the country with its nose to the economic grindstone continuing an inward-looking fifty-year rebuilding process. Others saw Austria as an "active neutral" shouldering political responsibilities in forums such as the United Nations while profiting as an intermediary between East and West. From the perspective of the students the image of the U.S. as an active participant in world affairs also dated from the First World War. America's aggressive leadership role was contrasted with that of neutral and circumspect Austria. American organizations, particularly large companies, were likewise viewed to have made their presence felt in world markets during the twentieth century while few Austrian firms have made impacts on the world economy.

Future Orientation, viewed as an examination of how one deals with the uncertainty inherent in planning for the future, was also a difficult parameter for students to analyze. The U.S. was seen as a nation that dealt with uncertainty by accumulating power and by

territorial expansion; the United States saw security in size and diversity. Students felt that American companies had done the same. Several multinationals were cited as examples. Austria, at least modern Austria, was seen to have aligned itself economically with other social-democratic economies in Europe, finding strength in numbers, if not size.

The effects of the *Sub-world System*, or *Deep Organizational Development*, are difficult to characterize or measure regardless of how the model is being applied. Application of the OSTO Model to a cross cultural analysis suggests two underlying assumptions: (a) different kinds of stress may be experienced in different countries and (b) people in different countries react differently to stress. Elements of a society under stress were readily apparent to participants as they considered the U.S. Problems ranging from drug abuse to "granny dumping" were raised, suggesting that narcissism and selfishness were undermining the collective American psyche. The primary problem addressed with regard to Austria was the influx of refugees and Austria's response to this situation. The adjectives used to describe this response included: selfish, arrogant and forgetful.

Conclusion

Experience in the University of Klagenfurt suggests that the OSTO Model is a multifaceted medium through which a culture can be viewed. The parameters support a systematic analysis of a culture in a manner that is relevant for business and non-business students alike. The strengths of the OSTO Model as a cross-cultural evaluative instrument are the same strengths that make it appropriate for organizational applications. By offering a coherent framework of relevant parameters the OSTO Model provides insight into the factors that influence the interactions of human beings with each other, whether working in an organization or belonging to different cultures.

The OSTO Systems Model was designed primarily to provide insight into business organizations without regard to national boundaries. The implicit assumption is that organizations are sufficiently similar across cultures for the same analytical tools to apply in any given country or culture. It is just this cross-national applicability which justifies using the OSTO model as a lens for examining and comparing other cultures as reflected in the factors that affect their organizations. In fact, this use of the OSTO Model may provide uniquely significant insights into similarities and differences among various national business

cultures. Thus, the approach discussed above expands the traditional objectives of organizational development to include sensitizing students to cultural and commercial conditions which may vary radically from those in their own countries.

OSTO SYSTEMS MODEL

Dimension	U.S.A.	Austria
SOCIAL	Heterogeneous society. Labour balance maintained by immigration. Meritocratic system. Entrepreneurial business climate.	Small, primarily Germanic population. Highly structured legal and bureaucratic institutions.
TECHNICAL SYSTEM	Mass-production characterized by functionalism and specialization predicated on the advantages of economies of scale. Technological systems supported by university research centers and government supported R&D, especially in defense related fields.	Technologically modern. Emphasis on "craft" traditions (rather than mass production).
ECONOMIC SYSTEM	Relatively Laissez-faire. Resource-rich with diversified industry. Comparatively "free trade". Affluent domestic market. Relatively poor productivity growth from a high base.	Economically successful with strong growth, high employment and stable currency. Social-Democratic Economy characterized by greater equality, social justice and economic safety for members of the economy.
PRODUCT MARKET FUTURE	Future product orientation supported by consumer acceptance of obsolescence. Cultural affinity for novelty. High consumption patterns. Technological innovation.	Emphasis on worker training to keep abreast of technology. Emphasis on quality rather than on innovation.

POLITICAL CONTROL SYSTEM	Clear delineation of individual responsibility and authority for decision-making. Control exercised in the interests of shareholders. Interaction among stakeholders characterized by conflicting interests.	Control system characterized by compromise among stakeholders with political power accepted as a complement to economic criteria in decision-making; system subject to bureaucratic inertia.
ENVIRONMENT	The practical requirements of the territorial expansion which characterized American history into the 20th century included pragmatic, results-oriented, loosely controlled, open-system management. These attributes remain highly regarded in the literature describing the ideal American business organization.	Center of Europe.
HISTORY	Geographically vast, resource-rich but insular. Wealth of cultural and natural resources fostered Open Systems attitude. Emphasis on managing diversity.	Historically, politically and economically committed to Central Europe.
FUTURE ORIENTATION	Attempts to accommodate the future by diversifying in order to limit exposure to any single future outcome.	Seeks to spread future risks by further integration into a wider Europe through the European Free Trade Association and the European Community.
SUB-WORLD SYSTEM	National value on individualism conflicts with organizational requirement for teamwork, engendering negative emotional energy. The competitive climate inside and outside of organizational systems can evoke distrust, envy and anti-social behaviour. The lack of communal feeling in large organizations frequently obscures the individual and collective sense of worth and purpose. Existential alienation often results.	Renewed nationalism invites examination of unresolved issues of national identity and of complicity with Nazi policies.

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